
UUU UUU EEEEEEEEEEEEEEE TTTTTTTTTTTTTTT PPPPPPPPPPPP SSSSSSSSSSS YYY YYY
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UUUUUUUUUUUUUUU EEEEEEEEEEEEEEE TTT PPP SSSSSSSSSSS YYY
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UUUUUUUUUUUUUUU EEEEEEEEEEEEEEE TTT PPP SSSSSSSSSSS YYY

FILEID**SATSSS46

```
  SSSSSSSS    AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS  44    44      666666
  SSSSSSSS    AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS  44    44      666666
SS            AA    AA      TT      SS          SS          SS          44    44    66
SS            AA    AA      TT      SS          SS          SS          44    44    66
SS            AA    AA      TT      SS          SS          SS          44    44    66
SS            AA    AA      TT      SS          SS          SS          44    44    66
  SSSSSS      AA    AA      TT        SSSSSS      SSSSSS      SSSSSS    4444444444  66666666
  SSSSSS      AA    AA      TT        SSSSSS      SSSSSS      SSSSSS    4444444444  66666666
        SS    AAAAAAAAAA    TT              SS          SS          SS        44    66      66
        SS    AAAAAAAAAA    TT              SS          SS          SS        44    66      66
        SS    AA    AA      TT              SS          SS          SS        44    66      66      ....
        SS    AA    AA      TT              SS          SS          SS        44    66      66      ....
SSSSSSSS      AA    AA      TT    SSSSSSSS    SSSSSSSS    SSSSSSSS          44      666666        ....
SSSSSSSS      AA    AA      TT    SSSSSSSS    SSSSSSSS    SSSSSSSS          44      666666        ....

LL              IIIIII      SSSSSSSS
LL              IIIIII      SSSSSSSS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II        SSSSSS
LL                II        SSSSSS
LL                II              SS
LL                II              SS
LL                II              SS
LL                II              SS
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
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Table of contents

```
0000     1          .TITLE  SATSSS46 SATS SYSTEM SERVICE TESTS  $SETRWM (SUCC S.C.)
0000     2          .IDENT  'V04-000'
0000     3
0000     4  ;
0000     5  ;*****************************************************************************
0000     6  ;*                                                                           *
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0000    24  ;*                                                                           *
0000    25  ;*                                                                           *
0000    26  ;*****************************************************************************
0000    27  ;
0000    28
0000    29  ;++
0000    30  ; FACILITY:     SYSTST (SATS SYSTEM SERVICE TESTS)
0000    31  ;
0000    32  ; ABSTRACT:
0000    33  ;
0000    34  ;                THIS MODULE CONTAINS SUBROUTINES WHICH, WHEN LINKED
0000    35  ; WITH SUCCOMMON.OBJ, FORM TEST MODULE SATSSS46 TO TEST SUCCESSFUL
0000    36  ; OPERATION OF THE $SETRWM SYSTEM SERVICE. THE SERVICE IS INVOKED
0000    37  ; UNDER VARIOUS INPUT CONDITIONS WITH VARYING INPUT PARAMETERS. ONLY
0000    38  ; SUCCESSFUL STATUS CODES ARE EXPECTED IN THIS TEST MODULE.  CORRECT
0000    39  ; OPERATION OF THE SERVICE FOR EACH OF ITS ISSUANCES IS VERIFIED BY
0000    40  ; CHECKING FOR AN SS$_NORMAL STATUS CODE, EXPECTED RETURN ARGUMENTS
0000    41  ; AND EXPECTED FUNCTIONALITY PERFORMED.
0000    42  ;
0000    43  ; ENVIRONMENT:  USER MODE IMAGE; NEEDS CMKRNL PRIVILEGE,
0000    44  ;                DYNAMICALLY ACQUIRES OTHER PRIVILEGES, AS NEEDED.
0000    45  ;
0000    46  ; AUTHOR: THOMAS L. CAFARELLA,          CREATION DATE: APR, 1978
0000    47  ;
0000    48  ; MODIFIED BY:
0000    49  ;
0000    50  ;          : VERSION
0000    51  ; 01     -
0000    52  ;--
```

```
                                                H 11
                     0000     54          .SBTTL  DECLARATIONS
                     0000     55 ;
                     0000     56 ; INCLUDE FILES:
                     0000     57 ;
                     0000     58          $PRVDEF                         ; PRIVILEGE BIT DEFINITIONS
                     0000     59          $PHDDEF                         ; PROCESS HEADER OFFSETS
                     0000     60 ;
                     0000     61 ; MACROS:
                     0000     62 ;
                     0000     63 ;
                     0000     64 ; EQUATED SYMBOLS:
                     0000     65 ;
00000000             0000     66 ENABLE           = 0                     ; RESOURCE WAIT MODE ENABLE FLAG
00000001             0000     67 DISABLE          = 1                     ; RESOURCE WAIT MODE DISABLE FLAG
00000001             0000     68 SPECIAL_TQE      = 1                     ; REQIDT VALUE FOR $SETIMR SERVICE
00000002             0000     69 LOOP_TQE         = 2                     ; REQIDT VALUE FOR $SETIMR SERVICE
                     0000     70 ;
                     0000     71 ; OWN STORAGE:
                     0000     72 ;
```

```
                    00000000    74          .PSECT  RODATA,RD,NOWRT,NOEXE,LONG
                        0000    75 TEST_MOD_NAME:: STRING  C,<SATSSS46>     ; TEST MODULE NAME
                        0009    76 TEST_MOD_NAME_D: STRING I,<SATSSS46>     ; TEST MODULE NAME DESCRIPTOR
                        0019    77 MSG1_INP_CTL:   STRING  I,<  SSSRW!4ZW: CONDITIONS:>
                        0039    78                                          ; FAO CTL STRING FOR MSG1 IN SUCCOMMON.MAR
                        0039    79 MSG3_ERR_CTL::  STRING  I,< *SSSRW!4ZW: !AS>
                        0051    80                                          ; FAO CTL STRING FOR MSG3 IN SUCCOMMON.MAR
FFFFFFFF DC3CBA00       0051    81 ONE_MIN:        .LONG   -10*1000*1000*60,-1  ; ONE MINUTE ($SETIMR DELTA)
FFFFFFFF 4D2FA200       0059    82 FIV_MINS:       .LONG   -10*1000*1000*60*5,-1  ; 5 MINUTES ($SETIMR DELTA)
```

```
                                                J 11
00000000     84          .PSECT  RWDATA,RD,WRT,NOEXE,LONG
00000008 0000    85 PRIVMASK:    .BLKQ   1               ; ADDR OF PRIVILEGE MASK (IN PHD)
0000000A 0008    86 ASTSYNCH:    .BLKW   1               ; CONTAINS TESTNUM AFTER AST RTN ENTERED
         000A    87                                      ; ... USED TO VERIFY RES. WAIT REALLY OCCURS
0000000E 000A    88 TQECNT:      .BLKL   1               ; CNT OF TIMER REQUESTS (AND, HENCE, TQE'S)
```

```
                        .SBTTL  CONDITION TABLES
                ;
                ;       ***** CONDITION TABLES FOR SETRWM SYSTEM SERVICE *****
                ;
                        COND    1,NULL
                        COND    2,NULL
                        COND    3,NULL
                        COND    4,NULL
                        COND    5,NULL
                        .PSECT  SATSSS46,RD,WRT,EXE
```

```
                                        .SBTTL  TM_SETUP, TM_CLEANUP
                                ;++
                                ; FUNCTIONAL DESCRIPTION:
                                ;
                                ;               TM_SETUP AND TM_CLEANUP ARE CALLED TO PERFORM
                                ; REQUIRED HOUSEKEEPING AT THE BEGINNING AND END, RESPECTIVELY, OF
                                ; TEST MODULE EXECUTION.
                                ;
                                ; CALLING SEQUENCE:
                                ;
                                ;       BSBW TM_SETUP   BSBW TM_CLEANUP
                                ;
                                ; INPUT PARAMETERS:
                                ;
                                ;       NONE
                                ;
                                ; IMPLICIT INPUTS:
                                ;
                                ;       NONE
                                ;
                                ; OUTPUT PARAMETERS:
                                ;
                                ;       NONE
                                ;
                                ; IMPLICIT OUTPUTS:
                                ;
                                ;       TM_SETUP:  COND TABLE INDEX REGISTERS (R2,3,4,5,6) CLEARED;
                                ;                  ALL PRIVILEGES ACQUIRED.
                                ;
                                ; COMPLETION CODES:
                                ;
                                ;       EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
                                ;
                                ; SIDE EFFECTS:
                                ;
                                ;       SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
                                ;       (VIA RSB) IF ERROR ENCOUNTERED.
                                ;
                                ;--
                                
                                
                                TM_SETUP::
                        52   D4 0000      CLRL    R2                      ; INITIALIZE
                        53   D4 0002      CLRL    R3                      ; .. CONDITION
                        54   D4 0004      CLRL    R4                      ; .... TABLE
                        55   D4 0006      CLRL    R5                      ; ...... INDEX
                        56   D4 0008      CLRL    R6                      ; ........ REGISTERS
                    FFF3'    30 000A      BSBW    MOD_MSG_PRINT           ; PRINT TEST MODULE BEGIN MSG
00000000'EF 00000000'EF   DE 000D      MOVAL   TEST_MOD_SUCC,TMD_ADDR  ; ASSUME END MSG WILL SHOW SUCCESS
   03   00 00000000'8F   F0 0018      INSV    #SUCCESS,#0,#3,MOD_MSG_CODE ; ADJUST STATUS CODE FOR SUCCESS
           00000000'EF      0020
                            0025      MODE    TO,S$,KRNL              ; KERNEL MODE TO ACCESS PHD
        59 00000000'9F   D0 0048      MOVL    @#CTL$GL_PHD,R9         ; GET PROCESS HEADER ADDRESS
        00000000'EF   69 DE 004F      MOVAL   PHD$Q_PRIVMSK(R9),PRIVMASK ; GET PRIV MASK ADDRESS
                            0056      MODE    FROM,S$ ; BACK TO USER MODE
                            0057      PRIV    ADD,ALL                 ; GET ALL PRIVILEGES
```

```
                                                M 11
                     0077   162          $SETPRN_S TEST_MOD_NAME_D       ; SET PROCESS NAME
                     0084   163          SS_CHECK  NORMAL                ; CHECK STATUS CODE RETURNED FROM SETPRN
                  05 00B2   164          RSB                             ; RETURN TO MAIN ROUTINE
                     00B3   165 TM_CLEANUP::
              FF4A' 30 00B3   166          BSBW    MOD_MSG_PRINT           ; PRINT TEST MODULE END MSG
                  05 00B6   167          RSB                             ; RETURN TO MAIN ROUTINE
```

```
                        .SBTTL  CONDITION SUBROUTINES - SETUP AND CLEANUP
                ;++
                ; FUNCTIONAL DESCRIPTION:
                ;
                ;               CONDX AND CONDX_CLEANUP ARE SUBROUTINES WHICH ARE EXECUTED
                ; BEFORE AND AFTER THE VERIFY SUBROUTINE, RESPECTIVELY, WHENEVER A NEW
                ; CONDITION X VALUE IS SELECTED (SEE FUNCTIONAL DESCRIPTION OF SUCCOMMON
                ; ROUTINE IN SUCCOMMON.MAR). ANY SETUP FUNCTION PARTICULAR TO THE
                ; CONDITION X TABLE IS INCLUDED IN THE CONDX SUBROUTINE AND CLEANED
                ; UP, IF NECESSARY, IN THE CONDX_CLEANUP SUBROUTINE. THIS INCLUDES,
                ; ESPECIALLY, CODE TO DETECT CONFLICTS AMONG CURRENT ENTRIES IN TWO
                ; OR MORE CONDITION TABLES. IF A CONFLICT IS DETECTED, A NON-ZERO
                ; VALUE IS STORED INTO CONFLICT, WHICH CAUSES THE CALLING ROUTINE
                ; (SUCCOMMON) TO SKIP THE CURRENT ENTRY IN THE CONDITION X TABLE.
                ;
                ; CALLING SEQUENCE:
                ;
                ;       BSBW CONDX   BSBW CONDX_CLEANUP
                ;         WHERE X = 1,2,3,4,5
                ;
                ; INPUT PARAMETERS:
                ;
                ;       CONFLICT = 0
                ;
                ; IMPLICIT INPUTS:
                ;
                ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
                ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
                ;
                ; OUTPUT PARAMETERS:
                ;
                ;       CONFLICT SET TO NON-ZERO IF COND TABLE CONFLICT DETECTED.
                ;
                ; IMPLICIT OUTPUTS:
                ;
                ;       R2,3,4,5,6 PRESERVED
                ;
                ; COMPLETION CODES:
                ;
                ;       NONE
                ;
                ; SIDE EFFECTS:
                ;
                ;       NONE
                ;
                ;--
                ;
                ;
                ;
                COND1::
05              RSB                             ; RETURN TO MAIN ROUTINE
                COND1_CLEANUP::
05              RSB                             ; RETURN TO MAIN ROUTINE
                COND2::
05              RSB                             ; RETURN TO MAIN ROUTINE
                COND2_CLEANUP::
05              RSB                             ; RETURN TO MAIN ROUTINE
```

```
                00BB   226 COND3::
 05             00BB   227          RSB                             ; RETURN TO MAIN ROUTINE
                00BC   228 COND3_CLEANUP::
 05             00BC   229          RSB                             ; RETURN TO MAIN ROUTINE
                00BD   230 COND4::
 05             00BD   231          RSB                             ; RETURN TO MAIN ROUTINE
                00BE   232 COND4_CLEANUP::
 05             00BE   233          RSB                             ; RETURN TO MAIN ROUTINE
                00BF   234 COND5::
 05             00BF   235          RSB                             ; RETURN TO MAIN ROUTINE
                00C0   236 COND5_CLEANUP::
 05             00C0   237          RSB                             ; RETURN TO MAIN ROUTINE
```

```
                                                C 12
00C1    239          .SBTTL  FORM_CONDS
00C1    240 ;++
00C1    241 ; FUNCTIONAL DESCRIPTION:
00C1    242 ;
00C1    243 ;               FORM_CONDS FORMATS AND PRINTS INFORMATION ABOUT
00C1    244 ;  THE CURRENT ELEMENT IN EACH OF THE CONDITION TABLES.
00C1    245 ;
00C1    246 ; CALLING SEQUENCE:
00C1    247 ;
00C1    248 ;       BSBW FORM_CONDS
00C1    249 ;
00C1    250 ; INPUT PARAMETERS:
00C1    251 ;
00C1    252 ;       NONE
00C1    253 ;
00C1    254 ; IMPLICIT INPUTS:
00C1    255 ;
00C1    256 ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
00C1    257 ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
00C1    258 ;       FOR X = 1,2,3,4,5 :
00C1    259 ;               CONDX_T - TITLE TEXT FOR CONDX TABLE
00C1    260 ;               CONDX_TAB - ELEMENT TEXT FOR CONDX TABLE
00C1    261 ;               CONDX_C - CONTEXT OF THE CONDX TABLE
00C1    262 ;               CONDX_E - DATA ELEMENTS OF THE CONDX TABLE
00C1    263 ;
00C1    264 ; OUTPUT PARAMETERS:
00C1    265 ;
00C1    266 ;       NONE
00C1    267 ;
00C1    268 ; IMPLICIT OUTPUTS:
00C1    269 ;
00C1    270 ;       NONE
00C1    271 ;
00C1    272 ; COMPLETION CODES:
00C1    273 ;
00C1    274 ;       NONE
00C1    275 ;
00C1    276 ; SIDE EFFECTS:
00C1    277 ;
00C1    278 ;       NONE
00C1    279 ;
00C1    280 ;--
00C1    281
00C1    282
00C1    283
00C1    284 FORM_CONDS::
00C1    285         $FAO_S  MSG1_INP_CTL,FAO_LEN,FAO_DESC,TESTNUM
00E0    286                                         ; FORMAT CONDITIONS HEADER MSG
                FF1D'   30  00E0    287         BSBW    OUTPUT_MSG              ; ... AND PRINT IT
             14   14   91  00E3    288         CMPB    #COND1_C,#NULL          ; IS CONDITION 1 NULL ?
                  03   12  00E6    289         BNEQU   10$                     ; NO -- CONTINUE
                00BF   31  00E8    290         BRW     FORM_CONDSX             ; YES -- SUBROUTINE IS FINISHED
00E8    291 10$:
  00000000'EF   0000000E'EF   DE  00EB    292         MOVAL   COND1_T,MSG_A           ; SAVE ADDRESS OF CONDITION 1 TITLE FOR FAO
00000000'EF   0000000E'EF42   D0  00F6    293         MOVL    COND1_TAB[R2],MSG_B     ; SAVE ADDR OF COND 1 CURR TEXT ELT FOR FAO
        00000000'EF   14   90  0102    294         MOVB    #COND1_C,MSG_CTXT       ; SAVE CONDITION 1 CONTEXT FOR FAO
                      14   90  0109    295         MOV_VAL COND1_C,COND1_E[R2],MSG_DATA1 ; GIVE COND 1 DATA VALUE TO FAO
```

```
                                                D 12
                FEF4'  30  0109   296          BSBW    WRITE_MSG2                      ; FORMAT AND WRITE CONDITION 1 MSG
             14   14  91  010C   297          CMPB    #COND2_C,#NULL                  ; IS CONDITION 2 NULL ?
                03  12  010F   298          BNEQU   20$                             ; NO -- CONTINUE
              0096  31  0111   299          BRW     FORM_CONDSX                     ; YES -- SUBROUTINE IS FINISHED
                        0114   300 20$:
  00000000'EF   0000000F'EF  DE  0114   301          MOVAL   COND2_T,MSG_A           ; SAVE ADDRESS OF CONDITION 2 TITLE FOR FAO
00000000'EF   0000000F'EF43  D0  011F   302          MOVL    COND2_TAB[R3],MSG_B     ; SAVE ADDR OF COND 2 CURR TEXT ELT FOR FAO
        00000000'EF   14  90  012B   303          MOVB    #COND2_C,MSG_CTXT       ; SAVE CONDITION 2 CONTEXT FOR FAO
                        0132   304          MOV_VAL COND2_C,COND2_E[R3],MSG_DATA1 ; GIVE COND 2 DATA VALUE TO FAO
                FECB'  30  0132   305          BSBW    WRITE_MSG2                      ; FORMAT AND WRITE CONDITION 2 MSG
             14   14  91  0135   306          CMPB    #COND3_C,#NULL                  ; IS CONDITION 3 NULL ?
                03  12  0138   307          BNEQU   30$                             ; NO -- CONTINUE
              006D  31  013A   308          BRW     FORM_CONDSX                     ; YES -- SUBROUTINE IS FINISHED
                        013D   309 30$:
  00000000'EF   00000010'EF  DE  013D   310          MOVAL   COND3_T,MSG_A           ; SAVE ADDRESS OF CONDITION 3 TITLE FOR FAO
00000000'EF   00000010'EF44  D0  0148   311          MOVL    COND3_TAB[R4],MSG_B     ; SAVE ADDR OF COND 3 CURR TEXT ELT FOR FAO
        00000000'EF   14  90  0154   312          MOVB    #COND3_C,MSG_CTXT       ; SAVE CONDITION 3 CONTEXT FOR FAO
                        015B   313          MOV_VAL COND3_C,COND3_E[R4],MSG_DATA1 ; GIVE COND 3 DATA VALUE TO FAO
                FEA2'  30  015B   314          BSBW    WRITE_MSG2                      ; FORMAT AND WRITE CONDITION 3 MSG
             14   14  91  015E   315          CMPB    #COND4_C,#NULL                  ; IS CONDITION 4 NULL ?
                47  13  0161   316          BEQLU   FORM_CONDSX                     ; YES -- SUBROUTINE IS FINISHED
  00000000'EF   00000011'EF  DE  0163   317          MOVAL   COND4_T,MSG_A           ; SAVE ADDRESS OF CONDITION 4 TITLE FOR FAO
00000000'EF   00000011'EF45  D0  016E   318          MOVL    COND4_TAB[R5],MSG_B     ; SAVE ADDR OF COND 4 CURR TEXT ELT FOR FAO
        00000000'EF   14  90  017A   319          MOVB    #COND4_C,MSG_CTXT       ; SAVE CONDITION 4 CONTEXT FOR FAO
                        0181   320          MOV_VAL COND4_C,COND4_E[R5],MSG_DATA1 ; GIVE COND 4 DATA VALUE TO FAO
                FE7C'  30  0181   321          BSBW    WRITE_MSG2                      ; FORMAT AND WRITE CONDITION 4 MSG
             14   14  91  0184   322          CMPB    #COND5_C,#NULL                  ; IS CONDITION 5 NULL ?
                21  13  0187   323          BEQLU   FORM_CONDSX                     ; YES -- SUBROUTINE IS FINISHED
  00000000'EF   00000012'EF  DE  0189   324          MOVAL   COND5_T,MSG_A           ; SAVE ADDRESS OF CONDITION 5 TITLE FOR FAO
00000000'EF   00000012'EF46  D0  0194   325          MOVL    COND5_TAB[R6],MSG_B     ; SAVE ADDR OF COND 5 CURR TEXT ELT FOR FAO
        00000000'EF   14  90  01A0   326          MOVB    #COND5_C,MSG_CTXT       ; SAVE CONDITION 5 CONTEXT FOR FAO
                        01A7   327          MOV_VAL COND5_C,COND5_E[R6],MSG_DATA1 ; GIVE COND 5 DATA VALUE TO FAO
                FE56'  30  01A7   328          BSBW    WRITE_MSG2                      ; FORMAT AND WRITE CONDITION 5 MSG
                        01AA   329 FORM_CONDSX:
                05  01AA   330          RSB                                     ; RETURN TO CALLER
```

```
01AB    332          .SBTTL  VERIFY
01AB    333 ;++
01AB    334 ; FUNCTIONAL DESCRIPTION:
01AB    335 ;
01AB    336 ;               VERIFY IS CALLED ONCE FOR EACH COMBINATION OF CONDITION
01AB    337 ; TABLE VALUES (AS DETERMINED BY THE INDEX REGISTERS R2,3,4,5,6 FOR
01AB    338 ; COND TABLES 1,2,3,4,5, RESPECTIVELY). VERIFY ESTABLISHES THE CONDITIONS
01AB    339 ; SPECIFIED BY THE COND TABLES AND ISSUES THE SUBJECT SYSTEM SERVICE
01AB    340 ; ($SETRWM). THEN, THE SUCCESSFUL OPERATION OF THE SERVICE IS VERIFIED
01AB    341 ; BY EXAMINING THE STATUS CODE RETURNED, THE VALUES FOR RETURN ARGUMENTS
01AB    342 ; AND THE FUNCTIONALITY PERFORMED. THE EXAMINATIONS TAKE THE FORM OF
01AB    343 ; COMPARISONS AGAINST EXPECTED VALUES. ANY FAILING COMPARISON CAUSES AN
01AB    344 ; ERR_EXIT MACRO TO BE EXECUTED (EITHER DIRECTLY, OR INDIRECTLY,
01AB    345 ; THROUGH THE SS_CHECK MACRO); ERR_EXIT SETS EFLAG TO NON-ZERO,
01AB    346 ; PRINTS ERROR MESSAGES AND CAUSES AN IMMEDIATE RSB TO CALLER.
01AB    347 ; WHEN ERR_EXIT IS EXECUTED, FURTHER CALLS TO VERIFY ARE SUPPRESSED,
01AB    348 ; AND, AFTER EXECUTING CLEANUP SUBROUTINES, THE IMAGE EXITS.
01AB    349 ;
01AB    350 ; CALLING SEQUENCE:
01AB    351 ;
01AB    352 ;       BSBW VERIFY
01AB    353 ;
01AB    354 ; INPUT PARAMETERS:
01AB    355 ;
01AB    356 ;       NONE
01AB    357 ;
01AB    358 ; IMPLICIT INPUTS:
01AB    359 ;
01AB    360 ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
01AB    361 ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
01AB    362 ;       FOR X = 1,2,3,4,5 :
01AB    363 ;               CONDX_E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
01AB    364 ;                 TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
01AB    365 ;                 ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
01AB    366 ;                 FOR CONDX_E.
01AB    367 ;
01AB    368 ; OUTPUT PARAMETERS:
01AB    369 ;
01AB    370 ;       NONE
01AB    371 ;
01AB    372 ; IMPLICIT OUTPUTS:
01AB    373 ;
01AB    374 ;       VERIFY HAS NO OUTPUT. SINCE ITS PURPOSE IS TO TEST FOR ERRORS,
01AB    375 ;       IT MERELY RETURNS TO CALLER NORMALLY AFTER THE TESTS, PROVIDING
01AB    376 ;       ALL WERE SUCCESSFUL; IF AN ERROR IS DISCOVERED, RETURN IS VIA
01AB    377 ;       AN ERR_EXIT OR SS_CHECK MACRO, BOTH OF WHICH DOCUMENT DETECTED
01AB    378 ;       ERRORS.
01AB    379 ;
01AB    380 ; COMPLETION CODES:
01AB    381 ;
01AB    382 ;       EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
01AB    383 ;
01AB    384 ; SIDE EFFECTS:
01AB    385 ;
01AB    386 ;       SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
01AB    387 ;       (VIA RSB) IF ERROR ENCOUNTERED.
01AB    388 ;
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                                                F 12
                        01AB   389 ;--
                        01AB   390
                        01AB   391
                        01AB   392
                        01AB   393 VERIFY::
            00000000'EF   95    01AB   394          TSTB    CFLAG                   ; SHOULD CONDITIONS BE PRINTED ?
                     03   13    01B1   395          BEQL    5$                      ; NO -- CONTINUE
                   FF0B   30    01B3   396          BSBW    FORM_CONDS              ; YES -- FMT & PRINT ALL CONDS FOR THIS T.C.
                        01B6   397 5$:
00000008'EF 00000000'EF   B0    01B6   398          MOVW    ONES,ASTSYNCH           ; INDICATE AST RTN NOT YET EXECUTED
            0000000A'EF   D4    01C1   399          CLRL    TQECNT                  ; INIT TIMER COUNT FOR THIS TEST CASE
                        01C7   400 ;
                        01C7   401 ; * THE FOLLOWING $SETIMR IS ISSUED TO ALLOCATE (RESERVE) A TIMER
                        01C7   402 ; * QUEUE ENTRY SO THAT IT IS AVAILABLE FOR LATER USE.
                        01C7   403 ;
                        01C7   404          $SETIMR_S DAYTIM=FIV_MINS, REQIDT=#SPECIAL_TQE
                        01DA   405                                  ; ALLOCATE A TQE BY REQUESTING A TIMER
                        01DA   406          SS_CHECK NORMAL         ; CHECK FOR NORMAL RETURN
                        0208   407          $SETRWM_S #DISABLE      ; DISABLE RESOURCE WAIT MODE
      00000000'8F    50   D1    0211   408          CMPL    R0,#SS$_WASCLR          ; WAS WAIT MODE PREVIOUSLY ENABLED ?
                     03   12    0218   409          BNEQU   10$                     ; NO -- GO PROCESS ERROR
                   0063   31    021A   410          BRW     TMRLOOP                 ; YES -- CONTINUE
                        021D   411 10$:
00000000'EF 00000000'8F   D0    021D   412          MOVL    #SS$_WASCLR,EXPV        ; LOAD UP EXPECTED AND ...
            00000000'EF   50    D0    0228   413          MOVL    R0,RECV                 ; ... RECEIVED VALUES, THEN EXIT
                        022F   414          ERR_EXIT LONG,<RESOURCE WAIT MODE WAS NOT INITIALLY ENABLED>
                        0280   415 ;
                        0280   416 ; * THE FOLLOWING LOOP USES TIMER QUEUE ENTRIES UNTIL QUOTA
                        0280   417 ; * IS EXHAUSTED, AT WHICH TIME $SETIMR WILL RETURN EXQUOTA.
                        0280   418 ;
                        0280   419 TMRLOOP:
            0000000A'EF   D6    0280   420          INCL    TQECNT                  ; INCREMENT COUNT OF TIMER REQUESTS
                        0286   421          $SETIMR_S DAYTIM=FIV_MINS, REQIDT=#LOOP_TQE
                        0299   422                                  ; ENTER A TIMER REQUEST
      00000000'8F    50   D1    0299   423          CMPL    R0,#SS$_NORMAL          ; TIMER REQUEST ACCEPTED ?
                     DE   13    02A0   424          BEQLU   TMRLOOP                 ; YES -- GO DO ANOTHER
                        02A2   425          SS_CHECK EXQUOTA        ; NO -- TERMINATE TEST MODULE IF NOT EXQUOTA
                        02D0   426 ;
                        02D0   427 ; * AT THIS POINT THE TIMER QUEUE ENTRY QUOTA SHOULD BE EXHAUSTED.
                        02D0   428 ; * NOW, WE WILL ENABLE RESOURCE WAIT MODE AND RE-ISSUE THE $SETIMR
                        02D0   429 ; * WHICH FAILED ABOVE. THIS TIME, A RESOURCE WAIT WILL ENSUE; IT
                        02D0   430 ; * WILL BE RESOLVED IN AN AST ROUTINE BY CANCELING ALL TIMER REQUESTS.
                        02D0   431 ;
                        02D0   432          $CANTIM_S REQIDT=#SPECIAL_TQE   ; FREE UP SPECIAL RESERVED TQE FOR RE-USE BE
                        02DB   433          SS_CHECK NORMAL         ; CHECK FOR NORMAL RETURN
                        0309   434          $SETIMR_S DAYTIM=ONE_MIN, ASTADR=CANTIM_AST, -
                        0309   435                    REQIDT=#SPECIAL_TQE   ; SCHEDULE AST TO FREE RESOURCE WAIT
                        0320   436          SS_CHECK NORMAL         ; CHECK FOR NORMAL RETURN
                        034E   437 ;
                        034E   438 ; ****** SYSTEM SERVICE CALL WHICH IS THE SUBJECT OF THIS TEST CASE ******
                        034E   439 ;
                        034E   440          $SETRWM_S #ENABLE       ; ENABLE RESOURCE WAIT MODE
      00000000'8F    50   D1    0357   441          CMPL    R0,#SS$_WASSET          ; WAS WAIT MODE PREVIOUSLY DISABLED ?
                     03   12    035E   442          BNEQU   20$                     ; NO -- IT SHOULD HAVE BEEN
                   0061   31    0360   443          BRW     30$                     ; YES -- CONTINUE
                        0363   444 20$:
00000000'EF 00000000'8F   D0    0363   445          MOVL    #SS$_WASSET,EXPV        ; LOAD UP EXPECTED AND ...
```

```
                00000000'EF   50   D0   036E   446          MOVL    R0,RECV                         ;... RECEIVED VALUES, THEN EXIT
                                   0375   447          ERR_EXIT LONG,<INCORRECT STATUS CODE RETURNED FROM SETRWM>
                                   03C4   448 30$:
                                   03C4   449 ;
                                   03C4   450 ; * THE FOLLOWING CODE ISSUES ONE MORE SETIMR, WHICH SHOULD
                                   03C4   451 ; * HAVE TO WAIT FOR RESOURCES, SINCE WE HAVE JUST GOBBLED THEM
                                   03C4   452 ; * UP. TO ENSURE THAT THE SETIMR DOES NOT WAIT FOREVER, AN
                                   03C4   453 ; * AST ROUTINE WAS SCHEDULED (ABOVE) TO BE DELIVERED IN 1 MINUTE;
                                   03C4   454 ; * IT WILL CANCEL ALL ACTIVE TIMER REQUESTS; THIS SHOULD
                                   03C4   455 ; * FREE THE RESOURCES NEEDED BY OUR SETIMR, WHICH SHOULD,
                                   03C4   456 ; * IN TURN, COMPLETE NORMALLY.
                                   03C4   457 ;
                                   03C4   458          $SETIMR_S DAYTIM=FIV_MINS, REQIDT=#LOOP_TQE
                                   03D7   459                                          ; TRY TO REQUEST A TIMER
    00000008'EF   00000000'EF      B1   03D7   460          CMPW    TESTNUM,ASTSYNCH       ; WAS AST ROUTINE ENTERED ?
                            62     13   03E2   461          BEQLU   40$                    ; YES -- GO CHECK RETURN FROM SETIMR
    00000000'EF   00000000'EF      B0   03E4   462          MOVW    TESTNUM,EXPV           ; NO -- LOAD UP EXPECTED AND ...
    00000000'EF   00000008'EF      B0   03EF   463          MOVW    ASTSYNCH,RECV          ;... RECEIVED VALUES, THEN EXIT
                                   03FA   464          ERR_EXIT WORD,<RESOURCE WAIT DID NOT OCCUR AS EXPECTED>
                                   0446   465 40$:
                                   0446   466          SS_CHECK NORMAL                    ; SETIMR SHOULD EVENTUALLY FINISH NORMALLY
                                05 0474   467          RSB                                ; RETURN TO CALLER
```

```
                                    H 12
0475    469                 .SBTTL  VFY_CLEANUP
0475    470 ;++
0475    471 ; FUNCTIONAL DESCRIPTION:
0475    472 ;
0475    473 ;               VFY_CLEANUP EXECUTES SYSTEM SERVICES TO UNDO THE
0475    474 ; EFFECT OF THOSE ISSUED IN THE VERIFY SUBROUTINE. VFY_CLEANUP MUST
0475    475 ; ASSUME THAT VERIFY MAY NOT HAVE EXECUTED IN ITS ENTIRETY (IF AN
0475    476 ; ERROR IS FOUND). ALSO, VFY_CLEANUP MAY ISSUE SS_CHECK OR ERR_EXIT
0475    477 ; ONLY AFTER PERFORMING ALL OF ITS CLEANUP OPERATIONS; THIS IS REQUIRED
0475    478 ; IN THE EVENT THAT VFY_CLEANUP IS CALLED DURING ERROR PROCESSING,
0475    479 ; WHEN PERFORMING THE REQUIRED CLEANUP IS MORE IMPORTANT THAN
0475    480 ; POSSIBLY DISCOVERING A SECOND ERROR.
0475    481 ;
0475    482 ; CALLING SEQUENCE:
0475    483 ;
0475    484 ;       BSBW VFY_CLEANUP
0475    485 ;
0475    486 ; INPUT PARAMETERS:
0475    487 ;
0475    488 ;       NONE
0475    489 ;
0475    490 ; IMPLICIT INPUTS:
0475    491 ;
0475    492 ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
0475    493 ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
0475    494 ;       FOR X = 1,2,3,4,5 :
0475    495 ;               CONDX_E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
0475    496 ;                 TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
0475    497 ;                 ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
0475    498 ;                 FOR CONDX_E.
0475    499 ;
0475    500 ; OUTPUT PARAMETERS:
0475    501 ;
0475    502 ;       NONE
0475    503 ;
0475    504 ; IMPLICIT OUTPUTS:
0475    505 ;
0475    506 ;       NONE
0475    507 ;
0475    508 ; COMPLETION CODES:
0475    509 ;
0475    510 ;       EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
0475    511 ;
0475    512 ; SIDE EFFECTS:
0475    513 ;
0475    514 ;       SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
0475    515 ;       (VIA RSB) IF ERROR ENCOUNTERED.
0475    516 ;
0475    517 ;--
0475    518
0475    519
0475    520
0475    521 VFY_CLEANUP::
0475    522         $CANTIM_S REQIDT=#SPECIAL_TQE   ; CANCEL AST TIMER IF STILL PENDING
0480    523         $CANTIM_S REQIDT=#LOOP_TQE      ; MAKE SURE ALL OTHER TIMER REQ'STS ARE GONE
0488    524         SS_CHECK NORMAL                 ; ... AND CHECK FOR NORMAL COMPLETION
05  0489    525         RSB                         ; RETURN TO CALLER
```

```
                                                I 12
                     04BA    527          .SBTTL  CANTIM AST ROUTINE
                     04BA    528 ;
                     04BA    529 ;       THE AST ROUTINE IS SCHEDULED AFTER IT IS DISCOVERED
                     04BA    530 ;       THROUGH A FAILING $SETIMR THAT THE TIMER QUEUE
                     04BA    531 ;       ENTRY QUOTA HAS BEEN EXHAUSTED BY REPEATED
                     04BA    532 ;       SETIMR'S. THEN, WITH RESOURCE WAIT MODE
                     04BA    533 ;       ENABLED, THE SETIMR IS REPEATED; A RESOURCE WAIT
                     04BA    534 ;       IS EXPECTED. THIS AST ROUTINE SHOULD BE DELIVERED
                     04BA    535 ;       DURING THE RESOURCE WAIT; IT WILL CANCEL ALL ACTIVE
                     04BA    536 ;       TIMER REQUESTS IN ORDER TO CLEAR THE RESOURCE WAIT
                     04BA    537 ;       CONDITION. THE "SUSPENDED" SETIMR SHOULD THEN FINISH
                     04BA    538 ;       NORMALLY. THE ASTSYNCH DATA BASE IS SET TO TESTNUM
                     04BA    539 ;       IN THIS ROUTINE TO INDICATE THAT DELIVERY HAS OCCURRED.
                     04BA    540 ;       THIS IS VERIFIED IN THE MAIN ROUTINE TO GUARANTEE
                     04BA    541 ;       THAT A WAIT DID INDEED OCCUR -- I.E., THE SETIMR DID
                     04BA    542 ;       NOT COMPLETE IMMEDIATELY, BUT INSTEAD WAITED ONE
                     04BA    543 ;       MINUTE UNTIL THE AST WAS DELIVERED.
                     04BA    544 ;
                0000 04BA    545 CANTIM_AST:      .WORD   0
0000000B'EF 00000000'EF  B0  04BC    546          MOVW    TESTNUM,ASTSYNCH        ; INDICATE AST RTN EXECUTED FOR THIS T.C.
                     04C7    547          $CANTIM_S REQIDT=#LOOP_TQE       ; CANCEL ALL OUTSTANDING TIMER REQUESTS
                  04 04D2    548          RET                              ; RETURN TO MAIN ROUTINE
                     04D3    549          .END
```

```
$$$$                    = 00000404 R      04
$$$CHARS                = 00000027
$$$STRINGS              = 00000001
$$T1                    = 00000000
$$T2                    = 00000004
ASTSYNCH                  00000008 R      03
BYTE                    = 00000001   G
CANTIM_AST                000004BA R      04
CFLAG                     ******** X      04
CHMRTN                    ******** X      04
CHM_CONT                  ******** X      04
COMP_SC                   ******** X      04
COND1                     000000B7 RG     04
COND1_C                 = 00000014
COND1_CLEANUP             000000B8 RG     04
COND1_H                   0000000E RG     03
COND1_T                   0000000E R      03
COND1_TAB                 0000000E R      03
COND2                     000000B9 RG     04
COND2_C                 = 00000014
COND2_CLEANUP             000000BA RG     04
COND2_H                   0000000F RG     03
COND2_T                   0000000F R      03
COND2_TAB                 0000000F R      03
COND3                     000000BB RG     04
COND3_C                 = 00000014
COND3_CLEANUP             000000BC RG     04
COND3_H                   00000010 RG     03
COND3_T                   00000010 R      03
COND3_TAB                 00000010 R      03
COND4                     000000BD RG     04
COND4_C                 = 00000014
COND4_CLEANUP             000000BE RG     04
COND4_H                   00000011 RG     03
COND4_T                   00000011 R      03
COND4_TAB                 00000011 R      03
COND5                     000000BF RG     04
COND5_C                 = 00000014
COND5_CLEANUP             000000C0 RG     04
COND5_H                   00000012 RG     03
COND5_T                   00000012 R      03
COND5_TAB                 00000012 R      03
CTL$GL_PHD                ******** X      04
DESC                    = 00000010   G
DISABLE                 = 00000001
EFLAG                     ******** X      04
ENABLE                  = 00000000
EXPV                      ******** X      04
FAO_DESC                  ******** X      04
FAO_LEN                   ******** X      04
FIV_MINS                  00000059 R      02
FORM_CONDS                000000C1 RG     04
FORM_CONDSX               000001AA R      04
LONG                    = 00000004   G
LOOP_TQE                = 00000002
MOD_MSG_CODE              ******** X      04
MOD_MSG_PRINT             ******** X      04
MSG1_INP_CTL              00000019 R      02
MSG3_ERR_CTL              00000039 RG     02
MSG_A                     ******** X      04
MSG_B                     ******** X      04
MSG_CTXT                  ******** X      04
NOTARG                  = 00000000   G
NULL                    = 00000014   G
ONES                      ******** X      04
ONE_MIN                   00000051 R      02
OUTPUT_MSG                ******** X      04
PCV                       ******** X      04
PHD$Q_PRIVMSK           = 00000000
PRIVMASK                  00000000 R      03
PRIV_ARGS               = 00000002
PROCESS_ERR               ******** X      04
QUAD                    = 00000008   G
RECV                      ******** X      04
REST_REGS                 ******** X      04
SAVE_REGS                 ******** X      04
SPECIAL_TQE             = 00000001
SS$_EXQUOTA               ******** X      04
SS$_NORMAL                ******** X      04
SS$_WASCLR                ******** X      04
SS$_WASSET                ******** X      04
SUCCESS                   ******** X      04
SYS$CANTIM                ******** GX     04
SYS$CMKRNL                ******** GX     04
SYS$FAO                   ******** X      04
SYS$SETIMR                ******** GX     04
SYS$SETPRN                ******** GX     04
SYS$SETPRV                ******** GX     04
SYS$SETRWM                ******** GX     04
TESTNUM                   ******** X      04
TEST_MOD_NAME             00000000 RG     02
TEST_MOD_NAME_D           00000009 R      02
TEST_MOD_SUCC             ******** X      04
TMD_ADDR                  ******** X      04
TMRLOOP                   00000280 R      04
TM_CLEANUP                000000B3 RG     04
TM_SETUP                  00000000 RG     04
TQECNT                    0000000A R      03
VERIFY                    000001AB RG     04
VFY_CLEANUP               00000475 RG     04
WORD                    = 00000002   G
WRITE_MSG2                ******** X      04
```

Psect synopsis

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
ABS	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
RODATA	00C00061 (97.)	02 (2.)	NOPIC USR CON REL LCL NOSHR NOEXE RD NOWRT NOVEC LONG
RWDATA	00000013 (19.)	03 (3.)	NOPIC USR CON REL LCL NOSHR NOEXE RD WRT NOVEC LONG
SATSSS46	000004D3 (1235.)	04 (4.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.05	00:00:00.33
Command processing	107	00:00:00.68	00:00:02.13
Pass 1	236	00:00:05.63	00:00:11.60
Symbol table sort	0	00:00:00.44	00:00:00.53
Pass 2	116	00:00:01.56	00:00:02.16
Symbol table output	12	00:00:00.08	00:00:00.11
Psect synopsis output	3	00:00:00.03	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	505	00:00:08.47	00:00:16.89

The working set limit was 1500 pages.
29546 bytes (58 pages) of virtual memory were used to buffer the intermediate code.
There were 20 pages of symbol table space allocated to hold 296 non-local and 27 local symbols.
549 source lines were read in Pass 1, producing 23 object records in Pass 2.
31 pages of virtual memory were used to define 26 macros.

Macro library statistics

Macro library name	Macros defined
_255DUA28:[SHRLIB]UETP.MLB;1	7
_255DUA28:[SYS.OBJ]LIB.MLB;1	1
_255DUA28:[SYSLIB]STARLET.MLB;2	15
TOTALS (all libraries)	23

526 GETS were required to define 23 macros.

There were no errors, warnings or information messages.

```
MACRO/LIS=LIS$:SATSSS46/OBJ=OBJ$:SATSSS46 MSRC$:SATSSS46/UPDATE=(ENH$:SATSSS46)+EXECML$/LIB+SHRLIB$:UETP/LIB
```